

Survey on International Merchandise Transport

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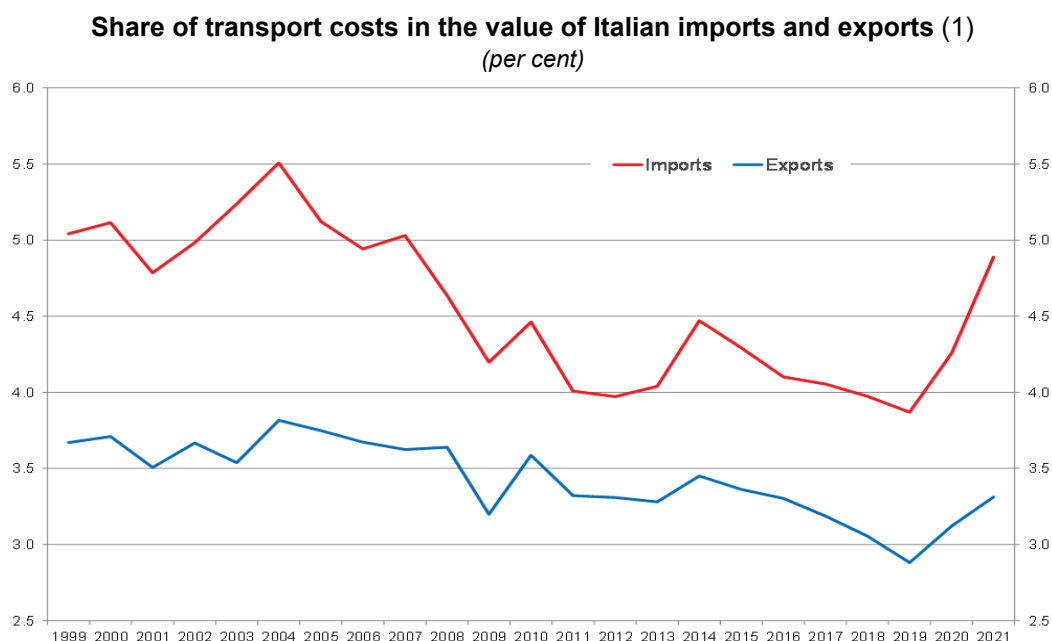
Main results

The Bank of Italy's Survey on International Merchandise Transport in 2021 shows that the share of transport costs in the value of Italy's merchandise imports and exports rose for the second consecutive year, to 3.3 and 4.9 per cent respectively from 3.1 and 4.3 per cent in 2020 (Figure 1).

Exceptional increases in sea freight rates were observed in the container shipping, in particular in routes from China and other Asian countries for imports and in routes to North America for exports. This is chiefly attributable to constraints on the supply side (including difficulties in finding containers and congested ports) and to geographic imbalances in the demand for cargo. Freight rates for liquid bulk (petroleum and petroleum products) declined owing to an excess supply of hold space, whereas they increased considerably for dry bulk (mineral ores and grains) and for general cargo due to greater demand for raw materials and intermediate goods linked to the recovery of the global economy; Ro-Ro rates (transport of road vehicles) remained stable. In the air freight sector, the historically high rates of the previous year continued owing to the scanty supply of scheduled flights, and therefore to a lack of hold space for merchandise transport. As for land transport, the rise in the average cost mostly affected the road freight sector, mirroring the hike in fuel prices.

The sharp increase in freight rates led to a considerable worsening of the merchandise transport deficit in Italy's balance of payments (-€10.9 billion, from -€6.8 billion in 2020), concentrated in the maritime sector.

Figure 1



Sources: Based on data from Istat, Alps Crossing, Eurostat and ENAC.

(1) Excludes goods transported via pipeline (natural gas imports). Provisional data for 2021; the costs include ancillary and logistical services linked to international freight transport, as well as any road transport costs supporting other modes of transport (container ships, bulk and container rail transport).

Introduction¹

Since 1999, the Bank of Italy has conducted sample surveys of international freight transport operators to collect the data needed to compile the balance of payments. The survey's main purpose is to estimate the unit cost of freight to and from Italy by mode of transport; carriers' market shares by nationality are also estimated.

The tonnage of imports and exports is based on Istat data on Italy's foreign trade.² On the basis of this information, the volume of goods transported by foreign and Italian carriers is calculated. Multiplying the freight costs by the volume of goods transported produces an estimate of the transport services purchased or sold abroad. The estimate also includes some other items: transport within Italy by non-resident ship managers (cabotage) and, more importantly, cross-trade by domestic carriers.

The 2021 survey involved 180 firms operating in Italy and collected data on 5,500 'standard consignments'.³ The next section illustrates the main findings by mode of transport and by area of origin/destination of the merchandise. Freight rates are given at market prices in euros per tonne and include ancillary transport costs (cargo handling, motorway tolls, carrier fees, etc.), for which the data are also gathered in interviews with transport operators. In specific cases, the prices are given in the trading currency (the dollar is widely used for sea transport) or net of ancillary services.

The average freight rates by mode of transport are calculated as the average of the tariffs by area of origin/destination, weighted by volumes transported and so, accordingly, the trends over time also reflect the geographical composition of the volumes transported. Finally, for some modes of transport, the market prices relate not to the weight but to the unit (e.g. a container) or to the overall load. In this way the cost per tonne can vary according to the average volumes transported.

International freight rates

Road freight rates

In 2021, road freight rates go up due to the increase in fuel prices

In 2021, against a backdrop of significant growth in volumes transported (Table A.1 in the Appendix), average costs rose for both full and partial loads (Table 1). The hike in freight rates was seen in all areas of origin/destination, mainly because of higher operating expenses resulting from the increase in fuel prices. Transport costs in the United Kingdom continued to be affected by Brexit and the larger share of empty return trips.

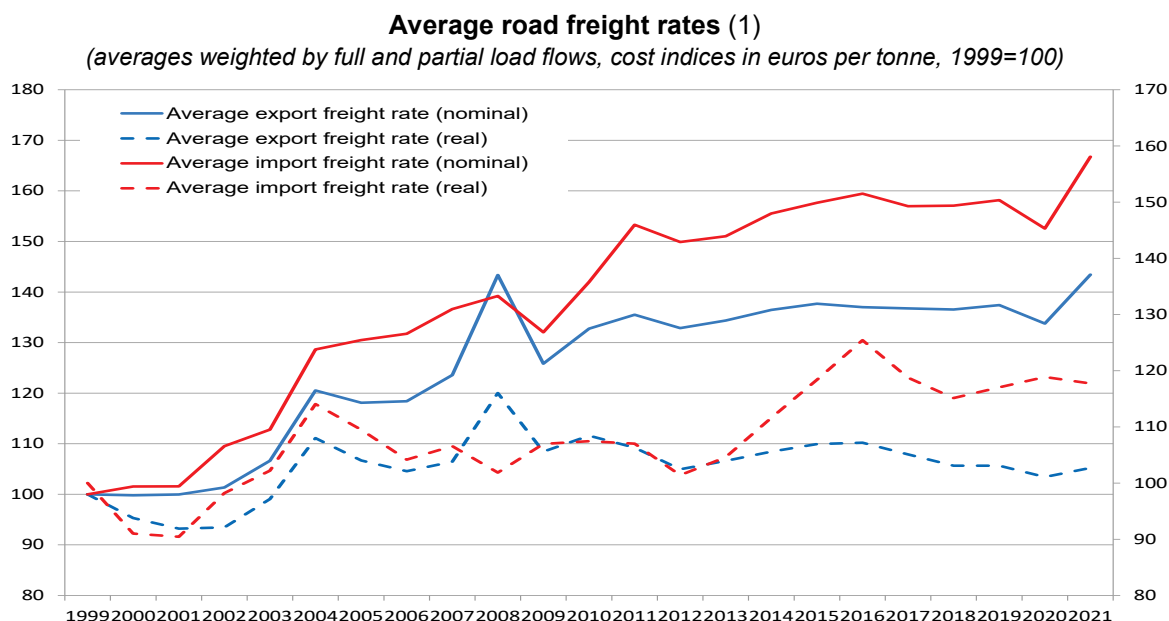
In real terms, i.e., relative to the producer price index for exports (PPIX) and for imports (PPIM), average import road freight rates per tonne remained basically unchanged (Figure 2).

¹ This report and the statistical appendix were prepared by Enrico Tosti.

² The findings of the survey are also used to adjust the breakdown by mode of transport of foreign trade flows, which, owing to their calculation method, tend to overestimate road haulage to the detriment of other modes of transport, especially rail freight. In fact, reporting importers/exporters tend to identify the mode of transport on the basis of the one used as the first and/or last link in the chain, the road truck, which often only performs the feeder service. The data can be found in the Statistical Appendix to this report. The method of correction is described in a separate document, see ['Methods and Sources: Methodological Notes'](#).

³ For the definition of standard consignments, see ['Methods and Sources: Methodological Notes'](#); freight rates are surveyed on a quarterly basis for bulk and container ships, half-yearly for air cargo, and annually for road/rail freight and any other types of sea transport. For the sake of brevity, only the yearly averages are reported. Infra-yearly trends for bulk and container ships are analysed in a dedicated box.

Figure 2



(1) The real costs are obtained by dividing the nominal costs by the export price index and the import price index respectively (source: Istat).

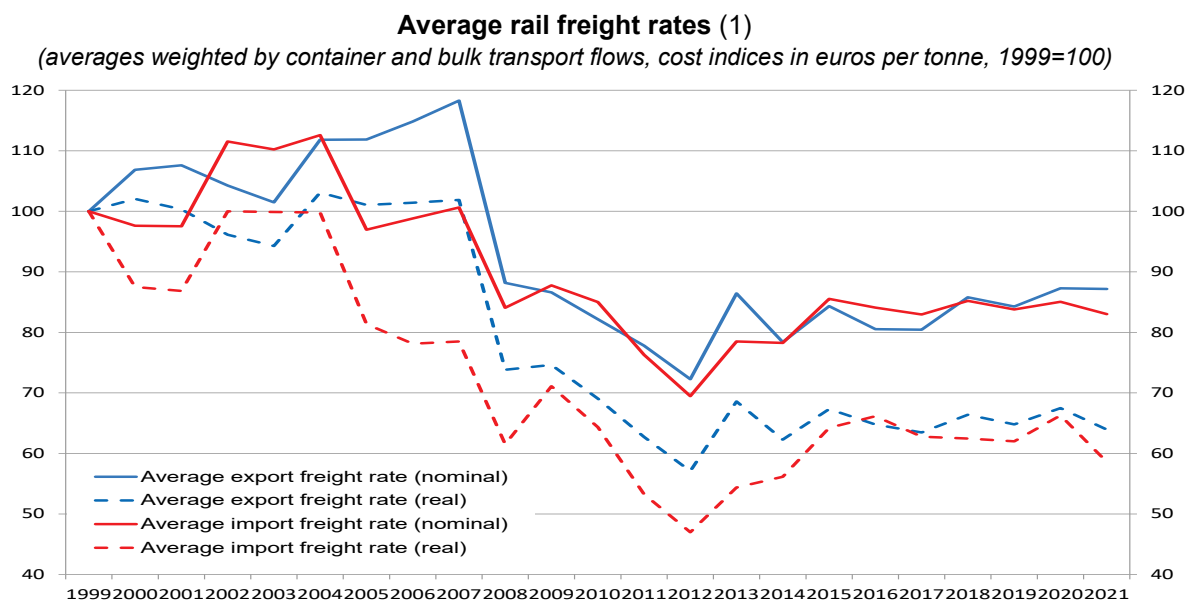
Rail freight rates

Average rail freight rates decline in the bulk sector, whereas they increase slightly in the container sector

Average rail freight rates remained basically stable for export flows, whereas they decreased for import flows (Table 2). The decline affected rail transport for the bulk sector which, with the easing of the restrictions to contain the pandemic, serves less and less as an alternative to road transport, while in the container sector average costs rose moderately. Of all the geographical areas, freight rates for central Europe and the Iberian Peninsula increased, whereas those for Eastern Europe, the Balkan

economies and the Alpine countries decreased. In real terms, average rail freight rates declined to levels just above the 2012 minimum (Figure 3).

Figure 3



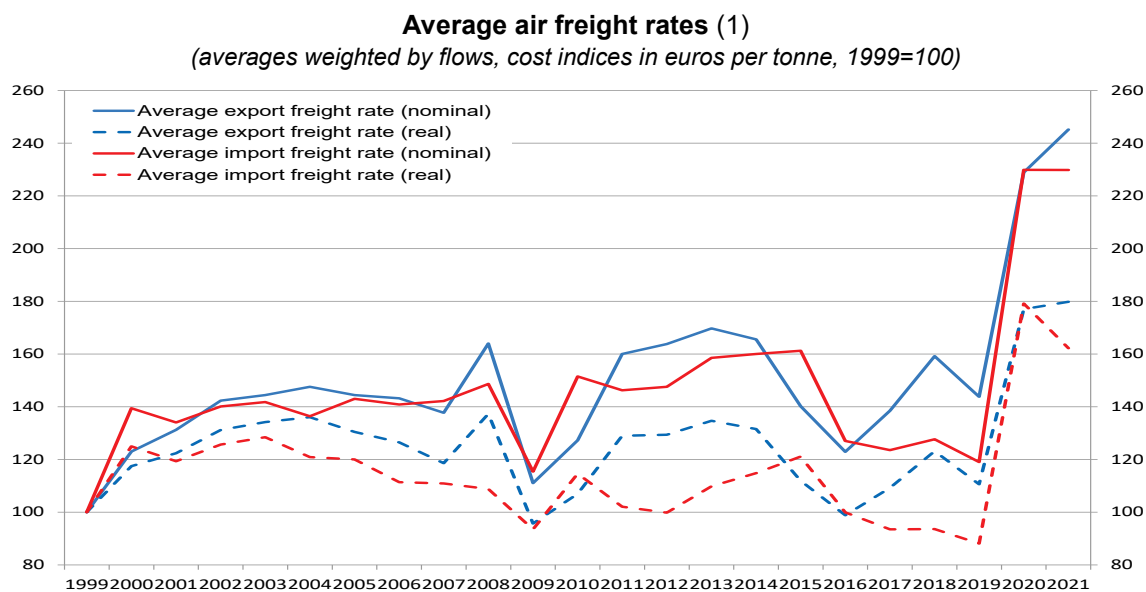
(1) The real costs are obtained by dividing the nominal costs by the export price index and the import price index respectively (source: Istat).

Air freight rates

Air freight rates remain at historically high levels

Following the exceptional surge recorded in 2020 due to the serious shortage in available belly cargo during the pandemic, last year air freight rates remained high, owing to the only partial resumption of scheduled flights. In nominal terms, average import prices remained stable, while export prices grew by 7 per cent (Table 3). However, this varied greatly from route to route: freight rates to China increased by more than 90 per cent, compared with a more than 20 per cent decrease for flows to/from Europe. In real terms as well, average costs remained at their highest levels for the last twenty years (Figure 4).

Figure 4



(1) The real costs are obtained by dividing the nominal costs by the export price index and the import price index respectively (source: Istat).

Sea freight rates

Sea freight rates are surveyed by load type (container, bulk cargo, general cargo and Ro-Ro⁴) to account for the different tariffs for the various market segments. For a detailed account of infra-yearly trends for the bulk and container sea freight sector, see the box 'Trends in sea and air freight rates and operators' expectations', which includes the findings of a survey on operators' opinions and expectations.

Container sea freight

Container sea freight rates soar to an all-time high

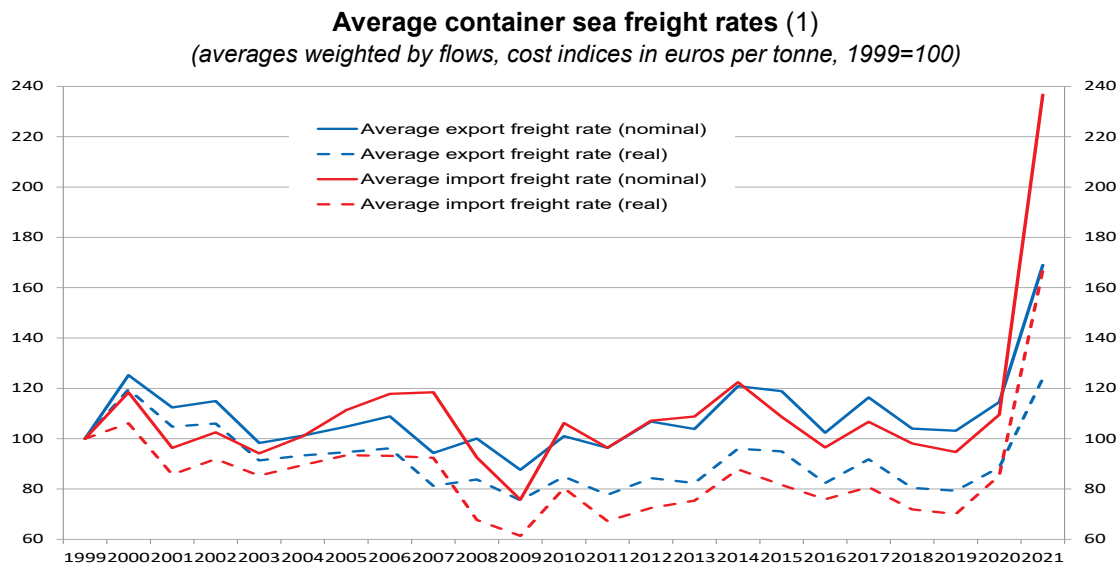
In 2021, the freight rates as collected in the survey soared sharply – based on dollars per container (Twenty-foot Equivalent Unit-TEU) excluding ancillary services. Indeed, transport costs more than doubled for exports, with flows to North America recording the largest increase (+180 per cent). These costs more than tripled for imports, especially from South America, China and other Asian countries (Table 4). Similarly to 2020,⁵ this is chiefly attributable not only to the high concentration among shipowners but also to supply side constraints (including difficulties in finding containers and the congestion of ports), to geographic imbalances in the demand for cargo and, to a lesser extent, to pandemic containment measures. Since the other cost factors (ancillary services) showed only minor variations, overall euro/tonne freight rates increased less sharply, though still considerably (+48 per cent for exports and +116 per cent for

⁴ For more information, see 'Methods and Sources: Methodological Notes'.

⁵ See [Survey on International Merchandise Transport – year 2020](#).

imports), driving costs above previous peaks, both in real and nominal terms (Figure 5).

Figure 5



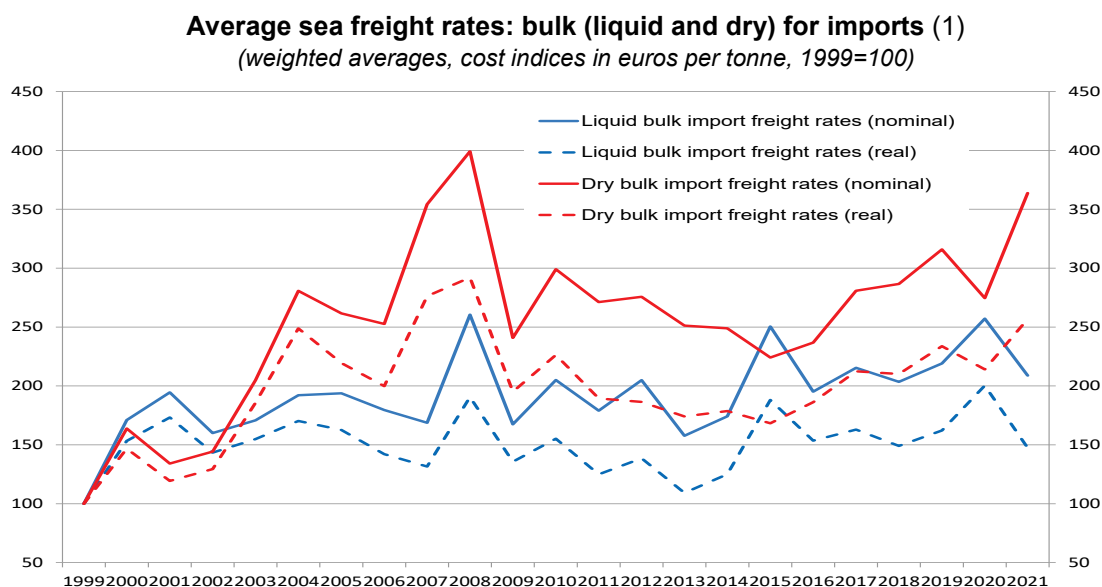
(1) The real costs are obtained by dividing the nominal costs by the export price index and the import price index respectively (source: Istat).

Bulk sea freight (liquid and dry)

Freight rates for dry bulk increase, while they decrease for petroleum

In 2021 as a whole, the prices for transporting dry bulk grew markedly both for grains and, above all, for coal and mineral ores (Table 5), reflecting the strong recovery of the global economy and consequent demand for raw materials. Additional pressures on freight rates stemmed from port congestion and demand polarization in the China–South-East Asia region. In contrast, there was a decline in the average costs for the transport of petroleum and petroleum products, which accounted for an excess in hold space supply, whereas freight rates for chemical products (including liquefied natural gas) remained broadly stable. In real terms, average sea freight rates (including ancillary services) for imports of dry cargo remained high, though significantly lower than the historical peaks recorded in 2008 (Figure 6); those relating to liquid bulk, instead, came down to the average levels recorded over the past twenty years.

Figure 6



(1) The real costs are obtained by dividing the nominal costs by the import price index (source: Istat).

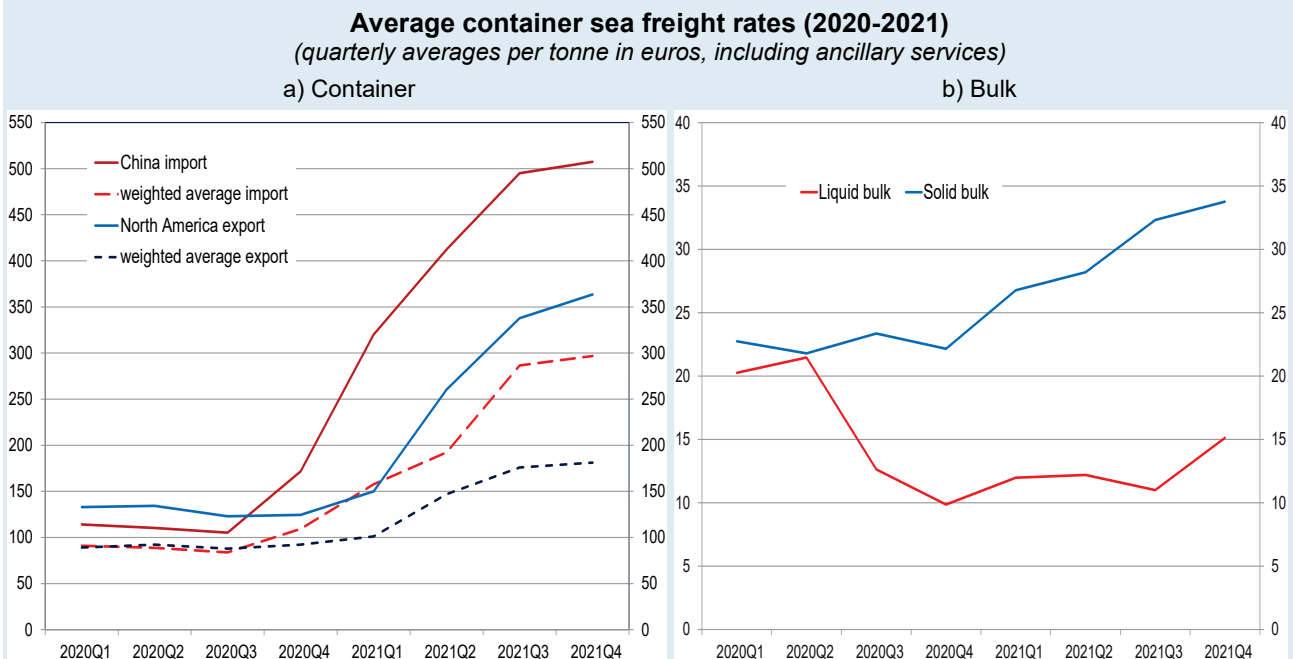
TRENDS IN SEA FREIGHT RATES AND OPERATORS' EXPECTATIONS

Since data are available on a quarterly basis for ship containers and bulk freight rates, it is possible to assess their infra-yearly performance.

In the container ship sector, freight rates for imports (calculated on the basis of overall tariffs in euros/tonne) have gradually risen since the end of 2020, picking up pace significantly in the third quarter of last year (see panel (a) of Figure A). The increases were especially marked for routes from China and showed signs of stabilizing only in the last quarter of 2021, at levels five times higher than those recorded in early 2020. On the export side, freight rates started to rise only in the second quarter of 2021, at a much more moderate pace, with the exception of flows to North America. In the early months of 2022, sector indicators¹ showed a slight decline from the historical highs reached at the end of the previous year.

In bulk transport, the infra-annual performance of freight rates was divided between the two main types, liquid and dry. The costs for transporting petroleum and petroleum products decreased in the second half of 2020, followed by a period of stability interrupted by the increase recorded at the end of 2021 (see panel (b), Figure A). Conversely, for dry cargo, freight rates grew steadily over 2021, to historically high levels. The conflict in Ukraine has had a significant impact on the supply routes – especially for grains (due to the halt on maritime traffic in the Black Sea and the consequent search for new suppliers) – and therefore on freight rates, possibly driving up prices even more. As for the transport of petroleum and liquefied natural gas (liquid bulk), the outlook is similar.

Figure A

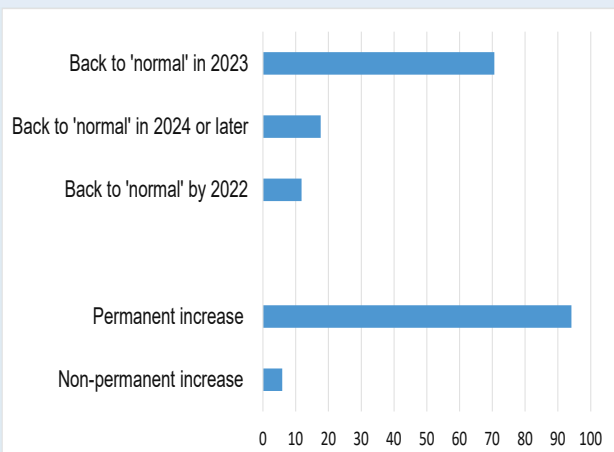


Within the framework of the survey, container sea freight operators were asked questions regarding their expectations on the duration and strength of the current rates hike, and the main causes. The interviews were conducted before the outbreak of the conflict in Ukraine on a sample of 17 operators (on a total of 35 operators that took part in the identification of costs for ‘standard consignments’). Nearly all the respondents expected freight rates to ‘go back to normal’ no sooner than 2023 (or 2024), though at permanently higher values than before the pandemic (see panel (a), Figure B). The main causes indicated for the surge in freight rates included constraints on the supply side (such as difficulty in finding containers and scarcity of fleet resources because of maintenance or delays in the building of new ships) and congested ports, followed, in descending order of importance, by overall demand for cargo, geographical imbalances in the demand for cargo, restrictions ensuing from the pandemic (especially abroad) and, finally, oil prices (see panel (b), Figure B).

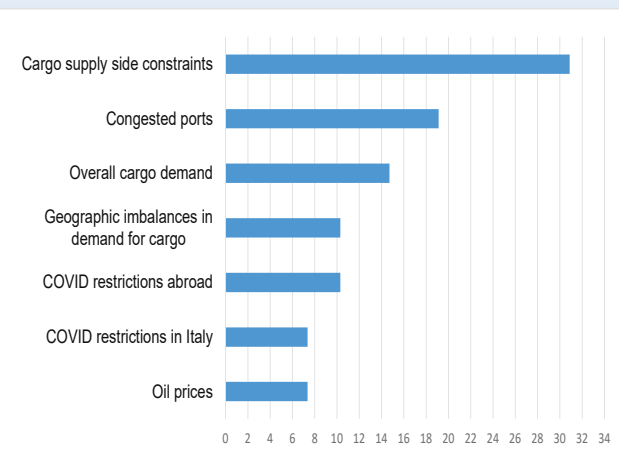
Figure B

Operators' expectations for container sea freight rates
(percentage of replies)

a) The duration and intensity of the rise in freight rates



b) The determinants of the rise in freight rates



¹ See the 'World Container Index' prepared by Drewry, <https://www.drewry.co.uk/supply-chain-advisors/supply-chain-expertise/world-container-index-assessed-by-drewry>.

General cargo and Ro-Ro transport

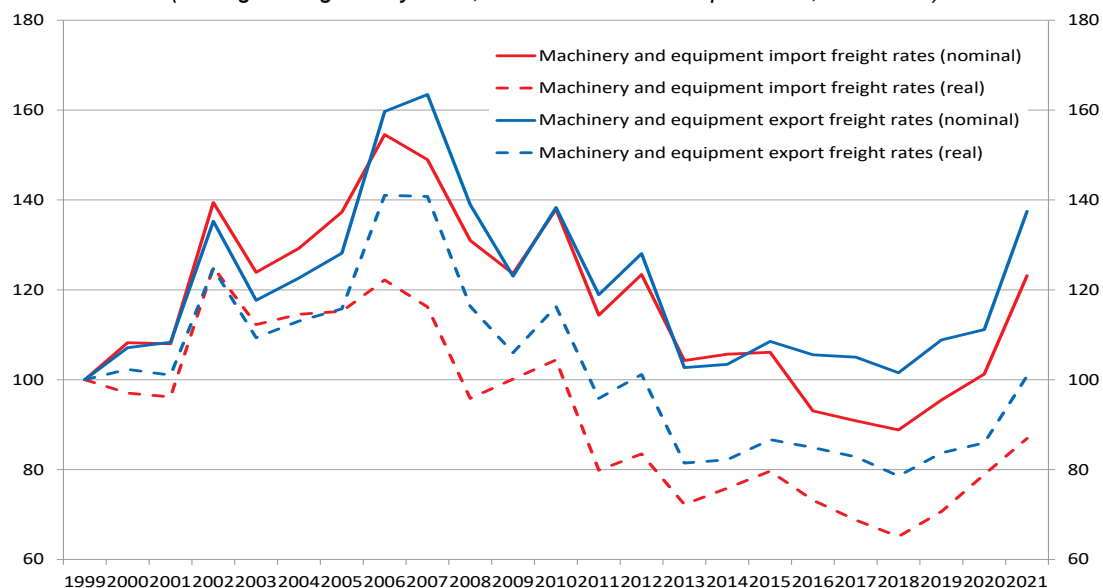
General cargo sea freight rates are increasing for plant, machinery and transport equipment

In 2021, the average rates in euros per tonne increased by more than 20 per cent in the most important general cargo categories, in relation to 'plant, machinery and transport equipment', in a context of strong recovery of international trade (Table 6). The upsurge meant that the average rates (including ancillary services and in euros per tonne) returned to levels close to those prevailing at the start of the 2010s, in both nominal and real terms (Figure 7). As regards the remaining categories, 'tubes, pipes and metal products' recorded a growth of a similar magnitude, while in the 'chemicals, building materials, forestry products' category the increase exceeded 35 per cent.

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Figure 7

Average general cargo sea freight rates: plant, machinery and transport equipment (1)
(averages weighted by flows, cost indices in euros per tonne, 1999=100)



(1) The real costs are obtained by dividing the nominal costs by the export price index and the import price index respectively (source: Istat).

Ro-Ro sea freight rates decrease slightly

In the Ro-Ro sector (transport of road vehicles, mainly in the Mediterranean area and with euro-denominated prices), costs decreased slightly in 2021 (Table 7). After the increase recorded a year earlier, attributable to higher operating expenses linked to the introduction of the obligation to use less polluting fuels, the decline affected most geographical areas with the

exception of one of the most important routes (to/from Turkey), for which average freight rates grew considerably.

Natural gas transport

The sample survey has been collecting data on the cost of transporting natural gas via pipelines since 2016. Previously, the information came directly from the firms of the group managing the gas pipelines. When the market was liberalized, other operators were allowed to purchase and transport gas to Italy, making it necessary to extend the survey to include this highly concentrated sector. The costs are those borne from the point of sale of the natural gas (and not the point of production) until the point of entry into Italy⁶ and they tend to be the same regardless of the volumes that are actually imported (take-or-pay contracts). As a result, changes in unit costs (in euros per tonne) also depend on the actual volumes transported rather than those agreed in the contract.

Natural gas transportation rates decline

In 2021, costs declined by 7.1 per cent on average compared with the previous year, affected by the considerable reduction in those relative to imports from the two main supplier countries, i.e. Russia and Algeria (Table 8). Unlike the previous year, the average figures include tariffs linked to the flows from Azerbaijan to account for the activation of the Trans-Adriatic

Pipeline (TAP) in December 2020.

Carriers' market shares

Since 2002, there has also been a sample survey to estimate the distribution of international merchandise sea transport to and from Italy and among Italian and foreign carriers. This survey is a source of information that is not readily available at international level. In fact, the statistics available often refer to ship owners and not to the actual operators of those ships. For balance of payments purposes, it is the residence of the operator that is needed and that is why the Bank of Italy survey addresses the operators. Data from the Bank of Italy's Survey on International Tourism are used for road transport, while data from administrative sources are processed for air transport.⁷

In 2021, market shares by nationality of carrier recorded limited changes compared with the previous year (Table 9). Swiss shipping companies hold the highest share in container transport, while Greek and Turkish sea carriers prevail in bulk transport and general cargo respectively. In the Ro-Ro sector, the highest share, even if in decline, is the preserve of Italian ship managers, who also hold significant shares in bulk liquid transport and in general cargo, in contrast to their marginal positions in the container and bulk dry transport sectors.

The market share of Italian carriers decreases on average

The overall average market share of Italian carriers, calculated by weighting on the basis of transport costs, came down to 14.4 per cent from 15.7 per cent a year earlier (Table 10). In the maritime sector, the market share recorded a historical low at 11.6 per cent; the contraction in the shares in Ro-Ro and general cargo more than offset the mild increase in the bulk and container sectors. At a time when the fleet controlled by resident ship

managers has become smaller and the volumes transported have shrunk (Table 11), higher freight rates have led to an increase in the turnover of cross-trade compared with the previous year, despite

⁶ Specifically, as regards Russian gas, the point of supply is at the border between Austria and Slovakia; for Algerian gas it is at the border between Algeria and Tunisia; for gas originating in Norway and the Netherlands the supply point is at the border between Germany and the Netherlands; and for gas from Libya, the supply point is on the Libyan coastline.

⁷ For more information, see ['Methods and Sources: Methodological Notes'](#).

the contraction recorded in quantitative terms. In road transport, the market share of Italian carriers rose to 22.5 per cent after reaching a historical low in 2020. Conversely, the air transport sector confirmed its downward trend (14.3 per cent of the market share), as a result of the continued difficulties experienced by the leading Italian air carrier.

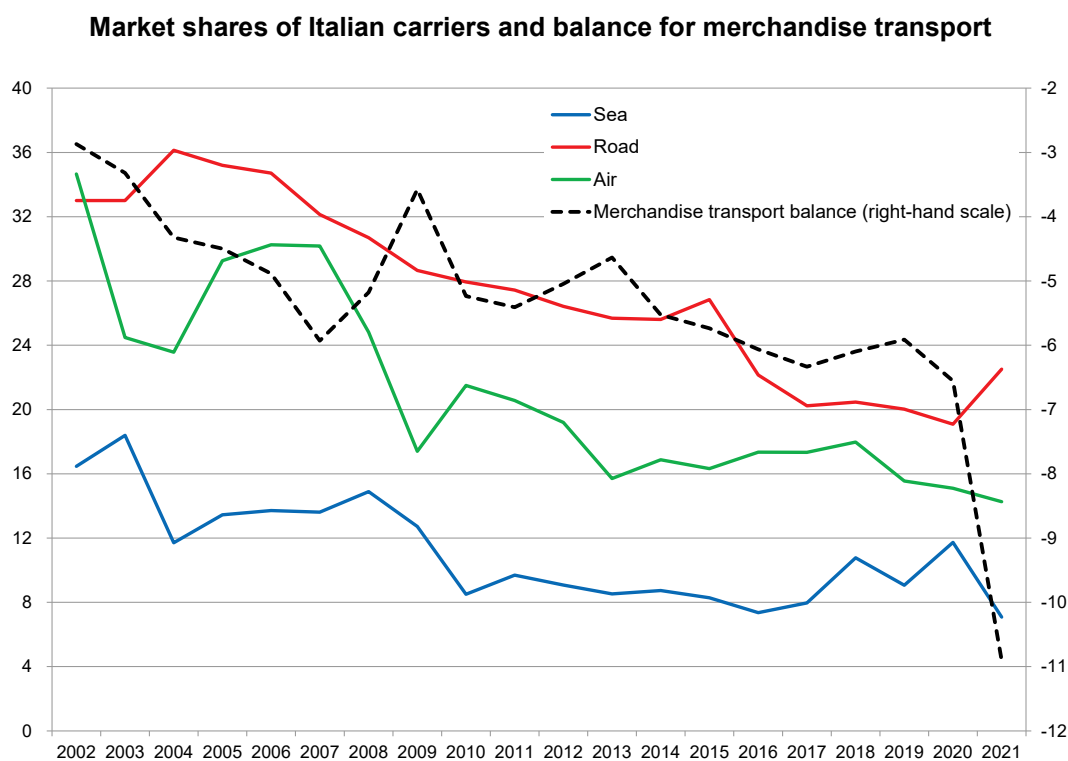
Balance on merchandise transport

In 2021 the deficit in the merchandise balance hits a forty-year high

Given the small market share of Italian carriers, the balance for merchandise transport has a structural deficit that has fluctuated between €3 billion and €7 billion per year over the past two decades (Figure 8). The fluctuations are mainly caused by the effects of the economic cycle on average costs.

The deficit soared in 2021 to €10.9 billion, the maximum recorded over the past forty years, both in absolute terms and in relation to GDP. In addition to a shrinking market share for Italian carriers and the expansion in volumes transported, the deterioration from the previous year is due to the increase in freight rates, concentrated almost exclusively in the shipping sector. The road and air sectors, whose deficit nearly doubled in 2020, also contributed somewhat. In 2021, merchandise transport exceeded 90 per cent of the overall deficit in transport services; it had accounted for more than two thirds of the deficit in the past decade (Table 12).

Figure 8



(1) The average market share for ships is obtained by weighting with the transport costs.

Tables

The source of the data for all the tables in this section is the Bank of Italy's Survey on International Merchandise Transport.

Table 1

Average road freight rates (FTL and groupage)* (2021)

Geographical area	Average freight rates (all types of load) (including ancillary services)				FTL and groupage freight rates (Average exports and imports, excluding ancillary services)			
	Exports (euros/tonne)	% change on 2020	Imports (euros/tonne)	% change on 2020	FTL (euros/vehicle)	% change on 2020	Groupage (euros/tonne)	% change on 2020
Austria – Switzerland	123	20.7	123	20.9	1,122	7.9	219	24.5
Benelux	125	6.4	125	6.5	1,759	6.5	189	8.2
Eastern Europe (1)	114	7.7	105	8.4	1,286	11.1	177	6.5
France	108	8.6	108	8.0	1,379	6.6	171	10.3
Germany	117	8.5	117	9.1	1,522	6.1	184	10.9
Greece – Turkey	143	12.4	150	10.9	2,528	11.1	198	11.3
Balkan countries	139	8.8	139	8.4	1,503	8.1	233	8.9
Baltic countries	153	8.1	153	2.1	2,677	0.4	195	9.1
Former USSR countries	228	-11.1	208	6.5	3,044	-10.5	316	-3.2
UK - Ireland	207	12.0	175	10.1	3,202	16.6	277	10.0
Scandinavia	163	7.8	174	8.4	2,726	10.7	244	8.3
Spain - Portugal	122	4.1	112	6.2	1,734	2.8	170	4.6
Weighted average (2)	126	7.2	122	9.3	1,592	5.0	196	10.3

* FTL = Full Truck Loads, while the term 'Groupage' = a partial load.

(1) Eastern Europe includes Poland, the Czech Republic, Slovakia and Hungary. – (2) Weights are based on transported volumes.

Table 2

Average rail freight rates: total cargo and container cargo (2021)

Geographical area	Overall freight rates (all types of load)				Container cargo rates			
	Exports (euros/tonne)	% change on 2020	Imports (euros/tonne)	% change on 2020	Exports (euros/tonne)	% change on 2020	Imports (euros/tonne)	% change on 2020
Austria – Switzerland	37.7	-2.8	36.9	-3.5	45.2	5.3	45.2	6.3
Benelux	54.3	2.0	51.0	2.7	61.2	2.9	58.2	3.9
Eastern Europe (1)	50.5	-6.8	49.2	-9.7	54.0	-0.2	51.0	-0.6
France	47.4	1.1	42.8	-0.9	55.2	4.3	54.2	4.7
Germany	46.8	1.7	45.1	-0.5	54.2	5.1	55.2	3.2
Greece – Turkey	73.0	3.4	69.4	4.3	79.2	0.8	86.2	0.0
Balkan countries	58.4	-6.5	51.0	-9.4	61.0	-0.3	55.0	-0.4
Baltic countries	78.3	-5.0	78.3	-8.5	81.0	0.1	88.0	-0.5
Former USSR countries	89.9	-4.0	85.6	-7.9	93.0	0.0	88.0	-0.5
UK - Ireland	72.7	-0.6	65.1	-0.2	83.7	-2.5	83.7	-3.7
Scandinavia	71.5	4.6	67.1	6.3	77.2	1.5	76.2	2.3
Spain - Portugal	56.1	2.1	53.0	4.1	67.2	2.8	59.2	3.5
Weighted average (2)	53.0	-0.1	46.8	-2.4	60.7	2.4	55.5	2.9

(1) Eastern Europe includes Poland, the Czech Republic, Slovakia and Hungary. – (2) Weights are based on transported volumes.

Table 3

**Average air freight rates
(2021)**

Geographical area	Exports (including ancillary services)		Imports (including ancillary services)	
	Euros/tonne	% change on 2020	Euros/tonne	% change on 2020
Europe	2,700	-22.9	2,700	-22.9
Russia	2,476	-20.4	2,476	-20.4
Mediterranean and Middle East	1,934	8.7	1,934	8.7
Rest of Africa	3,785	30.0	3,785	30.0
India	1,632	-13.5	3,543	-6.8
Indonesia - Singapore	1,786	8.6	3,543	-6.8
China	2,397	91.8	5,224	-5.1
Japan - Korea	2,755	-4.0	4,519	23.2
Oceania	6,562	8.2	6,562	8.2
United States and Canada	4,321	0.3	2,429	1.4
Central and South America	5,479	9.8	5,479	9.8
Weighted average (1)	3,083	7.1	4,038	0.0

(1) Weights are based on transported volumes.

Table 4

**Average container sea freight rates
(2021)**

Geographical area	Average rates (€/tonne) (including ancillary services)				Rates (\$/TEU) (excluding ancillary services)			
	Exports	% change on 2020	Imports	% change on 2020	Exports	% change on 2020	Imports	% change on 2020
Europe - Mediterranean	99.9	6.9	99.3	9.3	573	25.5	573	25.5
Rest of Africa	135.7	-3.4	133.6	-0.3	1148	1.6	1148	1.6
Middle East	129.3	18.7	127.4	21.5	1067	46.4	1067	46.5
India	136.8	30.7	305.0	122.7	1173	74.9	3733	217.5
South-East Asia	118.5	7.4	469.9	197.2	922	22.9	6224	320.8
China and Japan	113.9	16.7	461.6	198.7	853	54.0	6097	336.6
Oceania	265.2	58.5	258.1	61.9	2980	112.2	2980	112.2
USA and Canada	304.5	93.8	121.7	-12.1	3460	182.4	840	-20.8
Central America	180.6	26.5	177.0	29.2	1675	62.7	1675	62.8
South America	174.5	99.1	170.9	100.3	1675	311.5	1675	311.6
Weighted average (1)	175.3	47.5	263.6	116.1	1663	113.1	3060	241.0

(1) Weights are based on transported volumes.

Table 5

**Average rates for bulk sea freight: liquid and dry
(2021)**

Type of merchandise		Average rates for imports			
		€/tonne (including ancillary services)	% change on 2020	\$/tonne (excluding ancillary services)	% change on 2020
Liquid cargo	Petroleum and petroleum products	12.5	-22.5	12.7	-21.8
	Chemicals	84.7	-2.5	91.2	1.2
Dry cargo	Coal/minerals	25.0	48.3	21.1	87.6
	Grain	41.4	30.5	36.1	50.9

Table 6

Average general cargo sea freight rates
(2021)

Type of merchandise	Exports		Imports	
	Euros/tonne	% change on 2020	Euros/tonne	% change on 2020
Plant, machinery and transport equipment (1)	294.0	23.7	268.9	21.6
Chemicals, building materials and forestry products	84.8	36.6	93.4	37.0
Tubes, pipes and metal products (2)	79.6	18.8	78.8	25.0

(1) 'Plant, machinery and transport equipment' are Categories 11 (Machinery and equipment) and 12 (Transport equipment) of the NST-2007 classification. – (2) 'Tubes, pipes and metal materials' come under Category 10 (Basic metals; manufactured metal products, excluding machinery and equipment) of the NST 2007 classification.

Table 7

Average Ro-Ro sea transport rates
(2021)

Geographical area	Average of exports and imports (including ancillary services)	
	Euros/tonne	% change on 2020
Balkan countries	25.2	-5.4
France	16.5	-23.3
Greece	48.3	-4.9
Northern Europe	263.7	0.0
North Africa (excluding Tunisia)	121.0	-15.1
Spain	63.6	1.2
Tunisia - Malta	58.2	-1.1
Turkey	81.6	16.4
Other countries	271.5	0.0
Weighted average (1)	111.8	-1.7

(1) Weights are based on transported volumes.

Table 8

Average rates for natural gas transport via pipeline
(2021)

Point of entry	Country of origin of natural gas	Euros/tonne	% change on 2020
Mazara del Vallo	ALGERIA	14.7	-34.7
Melendugno (1)	AZERBAIJAN	49.3	n.a.
Gela	LIBYA	42.3	30.8
Passo Gries	NORWAY/NETHERLANDS	75.8	23.1
Tarvisio	RUSSIA	1.3	-13.8
Weighted average (2)		13.1	-7.1

(1) This pipeline was activated in December 2020, therefore the change of the transport cost was not calculated.

(2) Weights are based on transported volumes.

Table 9

Market shares by nationality of maritime carriers in 2021
(percentages, imports and exports of goods to and from Italy by ship)

Containers		Dry bulk		Liquid bulk		General cargo		Ro-Ro	
Switzerland	30.0	Greece	23.0	Greece	37.9	Turkey	26.1	Italy	43.6
Germany	17.7	Turkey	14.6	Italy	9.9	Italy	10.8	Greece	22.8
Denmark	12.7	Japan	6.8	Netherlands	5.3	Greece	7.8	Turkey	13.8
France	10.4	China	5.8	UK	5.0	Russia	6.4	Japan	7.7
China	6.2	Germany	5.8	Russia	4.9	Netherlands	4.3	Tunisia	3.6
Japan	4.5	Hong Kong	3.8	Japan	3.8	Norway	4.2	Norway	2.9
Turkey	3.0	Denmark	3.1	United States	3.4	Egypt	3.9	Switzerland	1.3
Italy	2.7	Bermuda	2.5	Monaco	3.3	Albania	3.6	Denmark	1.1
Romania	2.7	Italy	2.3	Bermuda	2.7	Germany	3.5	United States	0.7
Taiwan	2.4	Bulgaria	2.3	Denmark	2.7	Japan	3.4	South Korea	0.6
Israel	1.9	Netherlands	2.3	Turkey	2.4	Switzerland	2.8	Sweden	0.5
Hong Kong	1.7	Singapore	2.2	Norway	2.1	Denmark	2.8	Croatia	0.4
United States	1.4	Cyprus	2.0	Azerbaijan	1.9	Marshall Islands	2.5	Panama	0.2
UK	0.9	Taiwan	1.7	Finland	1.8	Malta	2.3	Marshall Islands	0.1
Singapore	0.5	United States	1.6	Singapore	1.6	Ukraine	2.2	Spain	0.1
UAE	0.5	Chile	1.5	Switzerland	1.6	Liberia	1.6	France	0.1
South Korea	0.5	Malta	1.5	Romania	1.3	Lebanon	1.6	Hong Kong	0.1
<i>Sub-total</i>	<i>99.7</i>	<i>Sub-total</i>	<i>82.6</i>	<i>Sub-total</i>	<i>91.7</i>	<i>Sub-total</i>	<i>89.7</i>	<i>Sub-total</i>	<i>99.8</i>
Other countries	0.3	Other countries	17.4	Other countries	8.3	Other countries	10.3	Other countries	0.2
Total	100.0	Total	100.0	Total	100.0	Total	100.0	Total	100.0

Table 10

Market shares of Italian carriers for imports and exports of goods to and from Italy
(data as a percentage)

YEARS	Sea						Road	Air	Overall averages (1)
	Liquid bulk	Dry bulk	Containers	General cargo	Ro-Ro	Average (1)			
2002	23.3	8.0	16.0	16.0		16.5	33.0	34.7	24.1
2003	27.7	10.3	11.9	24.4		18.4	33.0	24.5	24.6
2004	19.4	12.9	5.7	14.6		11.7	36.1	23.6	22.7
2005	20.8	8.6	8.9	17.7		13.5	35.2	29.3	23.9
2006	19.6	15.5	9.3	16.7		13.7	34.7	30.3	23.9
2007	21.5	13.6	7.9	17.9		13.6	32.1	30.2	23.0
2008	18.2	12.1	10.6	18.6	25.0	14.9	30.7	26.3	22.6
2009	21.2	12.2	5.5	16.7	23.8	12.7	28.6	17.4	20.8
2010	18.9	8.8	1.6	10.0	32.2	8.5	27.9	21.5	18.5
2011	18.0	12.7	2.8	12.9	27.4	9.7	27.4	20.6	19.4
2012	16.6	13.6	3.2	11.6	23.8	9.1	26.4	19.2	18.3
2013	13.8	12.2	2.7	10.1	29.7	8.5	25.7	15.7	18.0
2014	13.7	12.1	2.5	10.5	39.7	8.7	25.6	16.9	17.8
2015	10.7	8.9	2.8	9.7	34.1	8.3	26.8	16.3	18.2
2016	10.8	8.7	1.0	11.4	26.7	7.4	22.1	17.4	16.1
2017	15.5	8.7	1.8	6.1	30.7	8.0	20.2	17.3	14.9
2018	15.7	4.7	3.4	10.5	41.2	10.8	20.5	18.0	16.4
2019	11.6	4.7	1.8	7.9	42.1	9.1	20.0	15.6	15.3
2020	8.2	1.7	2.3	14.3	55.6	11.7	19.1	15.1	15.7
2021	9.9	2.3	2.7	10.8	43.6	7.1	22.5	14.3	14.4

(1) Weights are based on transport costs (unit freight rates for volumes transported).

Table 11

Annual volumes transported by the fleet controlled by ship managers resident in Italy

(millions of tonnes or per cent, if specified)

	Cabotage (domestic transport in Italy)	Imports and exports	Cross-trade	Total	Annual change (%)
2011	66.8	36.3	117.2	220.3	
2012	72.3	35.2	96.2	203.7	-7.5
2013	61.3	26.2	112.8	200.3	-1.7
2014	53.8	24.2	108.7	186.7	-6.8
2015	53.8	18.5	123.7	196.0	5.0
2016	54.3	21.3	119.3	194.9	-0.6
2017	54.1	25.9	153.3	233.3	19.7
2018	51.7	27.6	135.1	214.4	-8.1
2019	56.8	21.4	135.5	213.7	-0.3
2020	55.2	17.6	108.9	181.7	-15.0
2021	55.0	18.1	94.6	167.7	-7.7

Table 12

Balance on merchandise transport

(millions or per cent, if specified)

Flows	Mode of transport	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Credit	Sea	4,006	3,757	3,598	4,055	3,912	4,510	4,241	4,525	3,761	4,143
	of which: cross-trade	2,468	2,518	2,132	2,346	2,030	2,705	2,502	2,802	2,146	2,348
	Air	281	52	299	286	287	352	376	319	346	439
	Road	2,502	2,526	2,889	3,034	3,051	2,974	3,092	3,089	2,718	3,490
	Rail	29	26	28	30	30	30	30	34	38	38
	Pipelines	6	6	10	11	12	12	15	15	8	8
	Total	6,823	6,367	6,825	7,417	7,293	7,878	7,754	7,981	6,871	8,117
Debit	Sea	5,626	4,884	5,274	5,956	5,600	6,143	5,878	5,884	5,598	9,909
	Air	646	566	864	817	753	906	960	884	1,437	1,554
	Road	4,775	4,655	5,262	5,423	6,061	6,215	6,305	6,300	5,748	6,972
	Rail	289	309	378	372	380	404	399	384	343	336
	Pipelines	533	588	574	587	563	543	308	443	298	251
		Total	11,868	11,002	12,351	13,154	13,356	14,212	13,850	13,895	13,425
Balances	Sea	-1,620	-1,127	-1,676	-1,901	-1,688	-1,633	-1,637	-1,359	-1,837	-5,766
	Air	-365	-513	-565	-531	-466	-554	-584	-565	-1,092	-1,115
	Road	-2,273	-2,129	-2,373	-2,388	-3,010	-3,241	-3,213	-3,211	-3,030	-3,483
	Rail	-260	-283	-350	-342	-349	-374	-369	-351	-305	-298
	Pipelines	-527	-582	-563	-576	-550	-531	-293	-428	-290	-243
		Total (A)	-5,044	-4,635	-5,526	-5,1737	-6,064	-6,333	-6,096	-5,914	-6,554
<i>Memorandum item:</i>											
Overall balance of transport services¹ (B)		-8,223	-7,934	-8,286	-8,363	-8,418	-9,228	-9,518	-9,795	-7,793	-11,883
<i>A as a percentage of B</i>		<i>61.3</i>	<i>58.4</i>	<i>66.7</i>	<i>68.6</i>	<i>72.0</i>	<i>68.6</i>	<i>64.0</i>	<i>60.4</i>	<i>84.1</i>	<i>91.8</i>
Current account balance		-3,746	17,963	30,859	23,761	44,175	44,923	44,760	57,867	62,107	43,371

(1) In addition to international merchandise transport, includes passenger transport and postal services.

Statistical Appendix

Table A.1

Import and export volumes by mode of transport (1)
(millions of tonnes or percentage shares for the last year of the time series)

Imports	Sea					Rail		Road	Air	Pipelines
	Liquid bulk	Dry bulk	Containers	General cargo	Ro-Ro	Containers	Bulk			
1999	127.3	55.7	16.7	19.5		9.1	16.8	35.0	0.4	42.9
2000	129.7	60.1	17.8	20.7		9.8	17.6	38.4	0.5	38.6
2001	124.3	61.1	17.1	21.6		9.9	17.6	40.2	0.4	38.0
2002	121.4	59.9	17.0	21.7		9.8	17.0	42.3	0.3	41.5
2003	117.7	62.7	18.2	22.5		10.1	17.2	44.4	0.4	42.4
2004	114.3	69.8	17.8	23.6		10.7	17.9	47.9	0.4	47.4
2005	113.7	66.5	17.3	23.1		10.8	17.9	50.0	0.4	50.7
2006	111.0	65.8	20.0	23.8	5.1	11.6	19.1	53.9	0.4	54.6
2007	114.0	70.3	21.8	25.0	4.9	11.9	19.9	58.4	0.4	51.5
2008	106.7	68.1	20.8	22.7	4.6	11.0	18.6	54.3	0.3	56.3
2009	99.1	48.9	16.9	14.9	4.2	9.3	15.9	47.9	0.3	50.2
2010	106.0	51.0	21.0	20.3	4.2	10.7	19.1	55.7	0.3	48.0
2011	97.8	55.2	20.2	21.3	4.4	10.7	18.9	55.8	0.3	43.7
2012	78.9	51.4	16.6	17.7	3.9	10.1	17.3	52.7	0.3	41.3
2013	81.9	47.3	17.4	18.4	3.3	11.2	18.0	53.5	0.3	40.7
2014	73.9	44.7	18.2	19.4	3.3	11.8	19.0	55.9	0.3	37.1
2015	83.9	50.1	21.1	11.4	4.5	13.7	17.4	56.8	0.3	39.7
2016	86.4	50.1	22.2	11.9	4.5	13.8	18.1	57.8	0.4	39.0
2017	90.3	47.8	22.6	12.0	4.8	14.4	19.0	60.0	0.4	40.4
2018	88.3	47.6	23.2	12.7	5.0	14.9	19.3	61.7	0.5	39.5
2019	91.5	42.6	23.4	12.6	4.7	14.4	18.8	60.0	0.5	41.2
2020	74.0	34.0	22.4	10.7	4.0	11.8	15.7	58.8	0.4	37.5
2021	84.0	39.3	25.5	12.7	4.8	13.5	17.0	66.1	0.4	41.6
<i>2021 (as a %)</i>	27.5	12.9	8.4	4.2	1.6	4.4	5.6	21.7	0.1	13.6
Exports	Sea					Rail		Road	Air	Pipelines
	Liquid bulk	Dry bulk	Containers	General cargo	Ro-Ro	Containers	Bulk			
1999	18.7	4.5	19.2	8.6		7.9	5.0	36.9	0.4	
2000	18.1	4.4	20.9	9.7		8.7	5.2	39.5	0.4	
2001	18.2	3.9	20.8	9.6		9.2	5.4	40.3	0.4	
2002	18.0	3.3	21.8	9.7		9.3	5.5	40.7	0.5	
2003	21.0	2.6	20.8	9.1		9.5	5.6	40.8	0.4	
2004	21.3	2.4	22.3	9.8		10.3	5.8	43.5	0.5	
2005	24.7	2.1	23.0	10.3		11.1	6.2	45.9	0.5	
2006	23.0	1.7	24.0	9.4	5.3	12.0	6.9	48.1	0.5	
2007	27.2	2.7	25.3	9.5	5.5	12.7	7.4	54.5	0.7	
2008	25.8	2.9	25.5	9.9	5.4	12.1	7.3	52.6	0.5	
2009	24.2	2.4	21.6	7.0	4.2	9.8	6.1	42.2	0.4	
2010	27.7	2.8	24.7	7.7	4.4	12.4	7.9	52.7	0.5	
2011	23.7	2.5	25.8	7.6	4.1	12.6	7.9	53.6	0.5	
2012	25.8	2.4	27.3	8.5	4.1	12.5	7.8	53.3	0.5	
2013	19.1	4.1	25.1	9.9	3.9	10.2	8.6	55.5	0.5	
2014	18.5	4.2	25.4	10.1	3.8	9.3	8.5	52.2	0.5	
2015	23.2	4.8	26.5	9.0	5.1	10.9	7.2	56.3	0.5	
2016	22.8	4.1	25.7	8.6	5.0	12.2	8.0	62.2	0.5	
2017	24.9	3.6	26.6	8.1	4.8	11.6	8.1	60.4	0.6	
2018	22.4	3.3	26.5	7.7	4.7	11.5	8.2	60.5	0.6	
2019	19.9	3.4	25.0	7.7	4.7	11.4	8.0	59.9	0.6	
2020	19.5	3.0	25.1	7.5	5.6	10.4	7.2	53.3	0.4	
2021	23.7	3.0	26.4	7.5	6.1	11.5	8.3	60.1	0.6	
<i>2021 (as a %)</i>	16.1	2.1	17.9	5.1	4.1	7.8	5.6	40.7	0.4	

Sources: Based on data from Istat, Alps Crossing, Eurostat and ENAC.

(1) In 2015, there were some breaks in the time series (specifically for general cargo imports and maritime Ro-Ro) because of an update to the methodology for estimating the modal distribution of the foreign trade data. Provisional data for 2021.

Table A.2

Import and export values by mode of transport (1)
(billions of euros or percentage shares for the last year of the time series)

Imports	Sea					Rail		Road	Air	Pipelines
	Liquid bulk	Dry bulk	Containers	General cargo	Ro-Ro	Containers	Bulk			
1999	18.0	6.6	41.5	19.1		14.6	18.0	67.9	15.8	4.8
2000	31.3	7.4	47.2	23.0		17.3	20.7	82.5	20.1	8.1
2001	28.2	7.6	44.2	22.3		18.5	21.6	91.2	20.0	9.9
2002	25.3	7.0	40.2	20.2		18.5	21.2	94.8	19.8	9.3
2003	24.5	6.6	37.3	19.4		19.1	21.5	100.2	18.6	9.8
2004	25.6	7.6	37.3	21.4		20.9	23.1	111.7	19.7	10.4
2005	33.6	7.7	36.8	21.3		22.1	23.8	120.3	21.2	14.0
2006	39.9	8.0	38.5	22.0	5.9	24.6	26.6	136.3	22.3	20.1
2007	41.6	9.3	44.0	25.4	6.4	26.3	28.7	153.2	20.5	17.9
2008	49.8	11.2	45.2	24.2	6.3	25.1	27.8	147.8	20.3	24.3
2009	31.2	7.9	36.7	14.6	4.9	20.4	22.5	121.8	18.3	19.4
2010	45.7	9.3	49.7	20.0	6.0	24.0	26.6	144.1	20.9	19.4
2011	54.9	11.8	52.6	22.5	6.7	25.1	27.9	152.9	22.8	21.5
2012	53.8	10.7	44.8	18.9	6.1	22.8	25.4	142.3	23.5	24.3
2013	49.3	7.8	43.5	17.7	5.9	29.2	23.8	138.4	22.5	21.0
2014	40.9	7.5	46.5	18.4	6.3	29.5	24.9	140.4	23.4	16.4
2015	30.7	12.5	50.9	11.9	12.6	33.8	22.6	150.3	27.9	15.5
2016	25.5	11.5	51.0	11.3	13.8	34.7	23.9	156.0	26.5	11.7
2017	33.4	13.1	54.1	12.7	14.8	37.2	26.3	167.8	26.7	13.5
2018	40.1	13.7	56.2	13.8	14.9	38.2	27.2	172.8	29.0	16.0
2019	38.4	12.8	57.1	13.3	14.8	38.4	27.3	173.1	33.0	13.4
2020	22.7	9.6	54.3	10.9	12.5	37.4	24.7	149.6	36.5	9.3
2021	38.8	14.5	68.7	16.3	14.9	44.9	30.2	180.5	38.0	22.3
2021 (as a %)	8.3	3.1	14.6	3.5	3.2	9.6	6.4	38.5	8.1	4.7
Exports	Sea					Rail		Road	Air	Pipelines
	Liquid bulk	Dry bulk	Containers	General cargo	Ro-Ro	Containers	Bulk			
1999	2.9	1.3	43.7	22.0		19.8	10.5	98.7	17.9	
2000	4.9	1.3	52.5	25.6		23.5	11.9	112.4	22.8	
2001	4.5	1.2	54.1	24.9		25.9	12.6	119.1	24.3	
2002	4.2	1.0	53.0	22.7		26.0	12.4	116.7	24.4	
2003	4.9	0.8	48.6	20.1		27.2	12.6	118.4	23.0	
2004	5.6	0.6	50.8	20.3		30.1	13.7	129.0	24.4	
2005	8.7	0.4	52.6	19.3		32.2	14.5	135.3	26.1	
2006	9.5	0.3	57.4	15.3	11.8	36.6	16.2	145.0	28.6	
2007	11.4	0.5	62.2	18.0	13.2	39.8	17.8	169.6	31.7	
2008	13.8	0.7	65.1	19.7	13.6	38.5	17.9	168.7	30.7	
2009	8.4	0.5	54.7	15.3	10.4	30.0	14.1	131.1	25.9	
2010	13.1	0.6	60.9	16.5	11.5	34.2	16.0	151.0	30.8	
2011	14.5	0.7	66.6	17.4	11.9	37.2	17.6	169.0	35.4	
2012	17.9	0.7	72.2	18.9	11.7	37.0	17.4	171.0	38.0	
2013	13.9	1.4	69.8	18.0	10.3	35.1	21.3	176.3	38.9	
2014	12.2	1.4	72.9	18.4	10.4	36.2	21.7	181.3	39.2	
2015	11.2	1.3	70.1	18.1	18.4	42.6	14.7	193.0	44.3	
2016	9.0	1.2	68.4	17.0	17.2	43.1	15.1	195.9	44.1	
2017	11.9	1.3	73.1	17.8	18.1	46.1	16.1	209.2	49.0	
2018	12.7	1.2	76.1	18.0	17.7	47.4	17.1	216.3	51.0	
2019	11.4	1.3	77.8	17.9	16.8	48.8	17.3	222.6	55.9	
2020	7.6	1.2	80.8	18.4	19.5	40.9	20.5	193.9	46.3	
2021	13.1	1.4	94.3	21.3	23.8	47.7	24.2	226.8	57.9	
2021 (as a %)	2.6	0.3	18.4	4.2	4.7	9.3	4.7	44.4	11.3	

Sources: Based on data from Istat, Alps Crossing, Eurostat and ENAC.

(1) In 2015, there were some breaks in the time series (specifically for general cargo imports and maritime Ro-Ro) because of an update to the methodology for estimating the modal distribution of the foreign trade data. Provisional data for 2021.

Table A.3

Import and export unit values by mode of transport (1)
(euros/tonne)

Imports	Sea					Rail		Road	Air	Pipelines
	Liquid bulk	Dry bulk	Containers	General cargo	Ro-Ro	Containers	Bulk			
1999	142	119	2,488	980		1,609	1,072	1,939	36,929	113
2000	241	123	2,649	1,112		1,770	1,175	2,148	42,367	211
2001	227	124	2,588	1,035		1,862	1,226	2,269	54,425	261
2002	209	116	2,361	933		1,896	1,249	2,242	57,581	225
2003	209	105	2,047	864		1,884	1,251	2,255	48,422	232
2004	224	109	2,103	909		1,945	1,289	2,335	53,762	220
2005	295	116	2,121	922		2,042	1,330	2,404	59,066	276
2006	360	122	1,928	924	1,158	2,116	1,388	2,528	59,252	367
2007	365	133	2,014	1,016	1,302	2,217	1,440	2,621	53,885	347
2008	466	164	2,168	1,064	1,384	2,271	1,492	2,723	60,377	432
2009	314	161	2,171	984	1,172	2,196	1,414	2,543	52,471	386
2010	431	183	2,364	988	1,430	2,233	1,398	2,588	64,753	405
2011	561	214	2,608	1,058	1,514	2,338	1,475	2,740	71,558	491
2012	681	208	2,696	1,070	1,565	2,268	1,466	2,702	76,457	587
2013	601	165	2,495	960	1,800	2,594	1,321	2,585	82,822	515
2014	553	167	2,553	948	1,925	2,498	1,311	2,512	76,832	442
2015	366	249	2,412	1,042	2,797	2,474	1,299	2,646	81,779	391
2016	296	230	2,294	950	3,074	2,510	1,320	2,698	70,227	300
2017	370	273	2,396	1,065	3,097	2,578	1,383	2,798	64,263	334
2018	454	287	2,420	1,084	2,995	2,560	1,410	2,803	54,684	406
2019	420	302	2,438	1,059	3,129	2,667	1,448	2,886	69,304	325
2020	307	283	2,431	1,023	3,145	3,156	1,576	2,546	84,598	247
2021	462	369	2,695	1,287	3,101	3,338	1,779	2,728	101,127	535
Exports	Sea					Rail		Road	Air	Pipelines
	Liquid bulk	Dry bulk	Containers	General cargo	Ro-Ro	Containers	Bulk			
1999	157	277	2,279	2,545		2,511	2,116	2,677	40,282	
2000	271	287	2,515	2,637		2,717	2,278	2,845	51,982	
2001	249	300	2,594	2,610		2,808	2,340	2,951	54,715	
2002	233	299	2,436	2,336		2,800	2,251	2,868	53,508	
2003	235	291	2,337	2,213		2,863	2,267	2,902	51,256	
2004	263	261	2,275	2,060		2,920	2,339	2,963	51,160	
2005	352	211	2,288	1,868		2,913	2,334	2,950	55,925	
2006	413	157	2,398	1,629	2,237	3,047	2,334	3,015	59,448	
2007	418	186	2,460	1,889	2,393	3,127	2,386	3,114	46,395	
2008	534	221	2,551	1,997	2,519	3,179	2,460	3,209	61,747	
2009	345	217	2,529	2,172	2,455	3,067	2,314	3,105	63,753	
2010	473	212	2,464	2,145	2,606	2,750	2,029	2,865	67,666	
2011	611	270	2,578	2,299	2,907	2,944	2,218	3,155	71,263	
2012	692	300	2,641	2,224	2,854	2,951	2,230	3,209	78,245	
2013	727	349	2,775	1,819	2,617	3,440	2,465	3,175	82,338	
2014	662	343	2,866	1,822	2,767	3,897	2,568	3,472	82,010	
2015	481	281	2,648	2,009	3,612	3,894	2,027	3,426	85,621	
2016	396	304	2,663	1,971	3,433	3,528	1,882	3,151	81,710	
2017	476	358	2,746	2,198	3,760	3,979	1,985	3,466	80,345	
2018	569	378	2,876	2,331	3,780	4,111	2,079	3,576	79,486	
2019	572	378	3,107	2,319	3,604	4,287	2,176	3,719	91,105	
2020	390	384	3,220	2,445	3,485	3,941	2,868	3,637	103,595	
2021	550	458	3,568	2,830	3,914	4,163	2,915	3,773	99,411	

Sources: Based on data from Istat, Alps Crossing, Eurostat and ENAC.

(1) In 2015, there were some breaks in the time series (specifically for general cargo imports and maritime Ro-Ro) because of an update to the methodology for estimating the modal distribution of the foreign trade data. Provisional data for 2021.

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